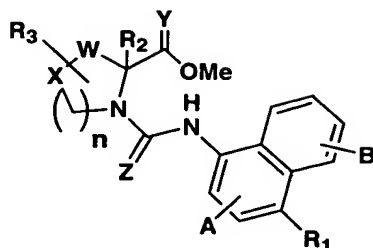


WHAT IS CLAIMED IS:

1. A compound of the formula Ia

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Ia

wherein

R_1 is selected from the group consisting of hydrogen (H), cyano (-CN), nitro (-NO₂), halo, heterocyclo, OR₄, CO₂R₅, CONHR₅, COR₅, S(O)_mR₅, SO₂NR₅R₅', NHCOR₅ and NHSO₂R₅;

R_2 is selected from the group consisting of hydrogen (H), alkyl or substituted alkyl, alkenyl or substituted alkenyl, arylalkyl or substituted arylalkyl, CO₂R₅, CONR₅R₅' and CH₂OR₅;

R_3 is selected from the group consisting of hydrogen (H), alkyl or substituted alkyl, alkenyl or substituted alkenyl, alkynyl or substituted alkynyl, cycloalkyl or substituted cycloalkyl, arylalkyl or substituted arylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, heteroaryl or substituted heteroaryl, halo, cyano(-CN), NHCOR₅, NHCO₂R₅, NHCONR₅R₅', NHSO₂R₅ and OR₄;

R_4 in each functional group is independently selected from the group consisting of hydrogen (H), alkyl or substituted alkyl, CHF₂, CF₃ and COR₅;

R_5 and R_5' in each functional group are each independently selected from the group consisting of hydrogen(H), alkyl or substituted alkyl, alkenyl or substituted alkenyl, alkynyl or substituted alkynyl, cycloalkyl or substituted cycloalkyl, heterocycloalkyl or substituted heterocycloalkyl, arylalkyl or substituted arylalkyl, aryl or substituted aryl, heteroaryl or substituted heteroaryl and -CN;

W is selected from the group consisting of $(CR_6R_6')_m$, $CHOH(CR_6R_6')_m$, $CO(CR_6R_6')_m$ and $C=NOR_4(CR_6R_6')_m$;

R_6 and R_6' are each independently selected from the group consisting of hydrogen (H), alkyl or substituted alkyl, alkenyl or substituted alkenyl, alkynyl or substituted alkynyl, cycloalkyl or substituted cycloalkyl, arylalkyl or substituted arylalkyl, heterocycloalkyl or substituted heterocycloalkyl, aryl or substituted aryl, heteroaryl or substituted heteroaryl, halo, cyano (-CN), $NHCOR_5$, $NHCO_2R_5$, $NHCONR_5R_5'$, $NHSO_2R_5$ and OR_4 ;

X is selected from the group consisting of methylene ($-CH_2-$), oxygen(O), $S(O)_m$, $NCOR_5$, NCO_2R_5 , $NCONHR_5R_5'$, $NSO_2NR_5R_5'$;

Y is selected from the group consisting of oxygen(O), sulfur(S) and hydrogen (H_2);

Z is selected from the group consisting of oxygen(O), sulfur(S), NH and NR_5 ;

A and B are each independently selected from the group consisting of hydrogen (H), halo, cyano(-CN), nitro(-NO₂), alkyl or substituted alkyl and OR_4 ;

m is an integer from 0 to 2; and

n is an integer of 1 or 2;

including all prodrug esters, pharmaceutically acceptable salts and stereoisomers thereof.

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2. A pharmaceutical composition comprising a compound as defined in claim 1.

3. The pharmaceutical composition of claim 2 further comprising at least one additional therapeutic agent selected from the group consisting of parathyroid hormone, bisphosphonates, estrogen, testosterone, progesterone, selective estrogen receptor modulators, growth hormone secretagogues, growth hormone, progesterone receptor modulators, anti-diabetic agents, anti-hypertensive agents, anti-inflammatory agents, anti-osteoporosis agents, anti-obesity agents, cardiac glycosides, cholesterol lowering agents, anti-depressants, anti-anxiety agents, anabolic agents, and thyroid mimetics.

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4. A method for treating or delaying the progression or onset of muscular atrophy, lipodistrophy, long-term critical illness, sarcopenia, frailty or age-related functional decline, reduced muscle strength and function, reduced bone density or growth, the catabolic side effects of glucocorticoids, chronic fatigue syndrome, bone
5 fracture repair, acute fatigue syndrome and muscle loss following elective surgery, cachexia, chronic catabolic state, eating disorders, side effects of chemotherapy, wasting, depression, nervousness, irritability, stress, growth retardation, reduced cognitive function, male contraception, hypogonadism, Syndrome X, diabetic complications or obesity, which comprises administering to a mammalian species in
10 need of treatment a therapeutically effective amount of a compound as defined in Claim 1.
5. A method according to claim 4 further comprising administering, concurrently or sequentially, a therapeutically effective amount of at least one additional
15 therapeutic agent selected from the group consisting of parathyroid hormone, bisphosphonates, estrogen, testosterone, progesterone, selective estrogen receptor modulators, growth hormone secretagogues, growth hormone, progesterone receptor modulators, anti-diabetic agents, anti-hypertensive agents, anti-inflammatory agents, anti-osteoporosis agents, anti-obesity agents, cardiac glycosides, cholesterol lowering
20 agents, anti-depressants, anti-anxiety agents, anabolic agents, and thyroid mimetics.